by changes in the technique of reversal. In many of parts of Britain over 85% of sterilisations are now carried out laparoscopically, and many of these operations entail the application of clips to the fallopian tubes rather than the more destructive methods of unipolar or bipolar diathermy, thermal coagulation, or the application of rings.[12] The search for a truly reversible method of sterilisation has continued unsuccessfully ever since Aldridge described his "extraperitoneal fimbriopexy" over 50 years ago.[13]

To the patient contemplating reversal today one clip at the mid-isthmic portion of each fallopian tube offers the best hope because the success of reversal is related, firstly, to the length of tube remaining and, secondly, to the site of the anastomosis. "Cut and tie" surgical methods and unipolar diathermy often destroy at least 4 cm of the fallopian tube and rings occlude about 2 cm but clips damage no more than 5 mm.[14] Successful repair needs a tube, with intact fimbriae, of at least 4 cm[5 6] and preferably 6 cm[2 15] after reanastomosis. An isthmoisthmic anastomosis is the most likely to be successful as there is little or no luminal disparity and ciliary action is probably not as important as in the ampulla.[5] Although mucosal flattening, absence of cilia, and polyposis have been found in the tubes of patients sterilised over five years previously,[16] the interval between sterilisation and reversal does not apparently affect the chances of success.[6 15]

Microsurgical techniques have been applied to the fallopian tubes since the early 1970s, and the principles of adequate exposure, scrupulous haemostasis, constant irrigation, minimal trauma, and careful placement of fine sutures are well established.[17] Individual microsurgeons do, however, differ in the details of techniques of anastomosis—particularly whether to use splints, which suture material to use, where to site sutures, and whether to use adjuvant treatment to avoid adhesion formation. Most surgeons find that magnification helps them create even the easiest anastomoses,[2 17] but no difference has been shown between results obtained with operating microscopes and those obtained with loupes.[18] Surgical technique is more important than the type of optical aid used, and the best training is a combination of laboratory and operating theatre experience.[17] "Practice makes perfect," yet most gynaecologists receive few requests for reversal surgery: services should perhaps be centralised.[6 19]

Careful counselling of any patient requesting sterilisation is essential, particularly in women under 30. The permanent nature of the operation must be emphasised. The gynaecologist who performs a sterilisation must use an effective technique but one which causes minimal trauma—so that reversal is more likely to be successful should the patient's circumstances change.

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Cannabis: dangers and possible uses

Cannabis is a prime example of a pharmacologically "dirty" drug. It contains many active substances with multiple effects and several (unknown) mechanisms of action. Cannabinoids exert psychotropic, hypnotic, tranquillising, antiemetic, anticonvulsant, and analgesic effects; they lower intraocular pressure, increase appetite, and affect the cardiovascular, respiratory, reproductive, and immune systems. Is it possible to separate adverse from desirable effects and so to harness this chameleon for therapeutic benefit?

The psychotropic effects of cannabis are largely reproducible by Δ^9-tetrahydrocannabinol, the most potent psychoactive ingredient.[1] Its hedonic properties are well known and have long been exploited for recreational purposes, but dysphoric reactions are common. Acute exposure even to moderate doses of cannabis and Δ^9-tetrahydrocannabinol, especially in those not used to taking the drug, can precipitate anxiety and panic reactions, depersonalisation, and schizophreniform, manic, and confusional psychoses.[2-5] Certain personality characteristics and environmental stress predispose to such reactions, but they can occur in patients without a psychiatric history.[5-7] Cannabis can precipitate schizophrenic illness and aggravate schizophrenia in patients controlled on neuroleptics[8]—possibly it antagonises some antipsychotic drug effects.[8 9] "Flashback" and recurrence of dysphoria during drug abstinence may occur after heavy cannabis exposure.[3]

Whether chronic cannabis use causes brain damage remains controversial. Persistent neuronal ultrastructural abnormalities and electroencephalographic changes have been observed in rats and primates after chronic cannabis exposure,[2 10] but a report of cerebral atrophy in human cannabis smokers[11] was not confirmed by studies using computed tomography,[12-14] electroencephalography,[15 16] and blood flow techniques.[3] Nevertheless, most reports agree that heavy chronic cannabis users can develop an amotivational syndrome, with apathy and loss of academic performance in students.[1-3] Since cannabis is concentrated in the limbic system,[17] the motivational centre in the brain, and interferes with memory, cognition, and psychomotor performance[1 2] such an effect is not surprising. The syndrome is probably reversible on stopping smoking cannabis.[1 3] Withdrawal of cannabis after chronic use gives rise to an abstinence syndrome similar to that seen after withdrawal of benzodiazepines and hypnotics.[3 18]

Cannabis presents other hazards for casual and chronic users. Even social doses seriously impair car driving and aeroplane flying ability because of distortions of time and space estimation, reduced vigilance, and incoordination[1 2]—and effects persist for many hours because the drug is eliminated slowly.[19] Cardiovascular effects include appreciable tachycardia,[20] hypotension,[2] and hypertension[21]; these changes may precipitate angina or even death[20] in predisposed individuals. Cannabis smoke is irritating to bronchial mucosa and may be more carcinogenic than tobacco smoke.[1] The drug depresses reproductive function in both sexes,[2] and Δ^9-tetrahydrocannabinol crosses the placenta and enters breast milk.[2] There is, however, no definite evidence of teratogenicity in man.[22] Cannabis also has immunodepressant effects, inhibiting T cell function.[2]

Those most at risk of the psychiatric effects of cannabis seem to be young teenagers, heavy daily users, psychiatric patients,[3] and those with emotional disturbances or who are undergoing environmental stress.[6] Physical risks apply particularly to car drivers and those with cardiovascular disease. Doctors should consider these factors when advising cannabis smokers or their parents.

Despite initial hopes[23] the therapeutic use of cannabinoids remains limited. Δ^9-Tetrahydrocannabinol,[24] nabilone,[25] the tetrahydrocannabinol analogue (BRL-4664),[26] and levonantradol[27-29] have been used as antiemetics for patients taking cytotoxic drugs. They are as effective as phenothiazines, with which they may be combined, but the incidence of adverse effects is high—a third of patients in some studies experiencing dysphoria and 90% somnolence.[27] Immunosuppression is a theoretical risk. Levonantradol is an effective analgesic for postoperative pain[30] and pain caused by cancer[31] but at the cost of adverse effects. Cannabinoids attenuate morphine withdrawal signs in animals by a non-opioid mechanism,[32 33] but this effect has not been explored in man. Oral cannabinoids are probably unsuitable for lowering intraocular tension in glaucoma,[34] and topical solutions require further development.[35 36] Cannabidiol is effective in some cases of generalised epilepsy refractory to other anticonvulsants[37] and potentiates the effect of diazepam and valproic acid in animals.[9 38] but further human studies are needed. Cannabinoids may eventually be used for anxiety,[39] insomnia,[37] muscle spasticity,[40] and bacterial and fungal infections[41] but probably not as antihypertensive agents,[21] bronchodilators,[2] or appetite stimulants for those with anorexia nervosa.[42]

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